

**BSAI Groundfish Plan Team  
Final Report  
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Loh-Lee Low (AFSC), Chair  
Mike Sigler (AFSC), Vice-chair  
Grant Thompson (AFSC), SSC Liaison  
Jane DiCosimo (NPFMC), Coordinator  
Dave Carlile (ADF&G)  
Mary Furuness (AKRO)  
Brenda Norcross (UAF)  
Leslie Slater (USFWS)

Dave Barnard (ADF&G)  
Kerim Aydin (AFSC)  
Bill Clark (IPHC)  
Lowell Fritz (NMML)  
Yuk Wing (Henry) Cheng (WDFW)  
Alan Haynie (AFSC)  
Dana Hanselman (AFSC)

The BSAI Groundfish Plan Team convened on Friday, September 19, 2009 from 1:00 pm to 4:00 pm. About 40 members of the public and AFSC staff attended parts of the meeting. The team revised the writing assignments for leading discussions and preparing the SAFE Report introduction summary sections for the November 2009 meeting.

Taina Honkalehto summarized the following three BSAI surveys conducted in 2009.

March echo integration-trawl (EIT) survey of pollock in the Bogoslof Island area. Two main spawning areas were identified: Umnak in the east and Samalga in the west. Pollock dominated the catch in 5 trawl hauls. The 2009 pollock population estimate was 110,000 tons. About 86% of the biomass came from the Samalga region. The overall size composition was unimodal with a mean of 55 cm. There were no new recruits evident this year. Fish do not typically appear in this population until they reach 4-5 years old, and peak numbers occur at 6-7 years old; therefore the 2006 year class has not been observed yet in the EIT survey. The last decade has been characterized by low, semi-stable biomass estimates. The next Bogoslof survey will be conducted in 2011.

Summer EIT survey of eastern Bering Sea shelf walleye pollock. The EIT survey methods were the same as in the past; a daytime survey, with continuous acoustic data collected at 5 frequencies along north-south transects spaced 20 nmi apart. The survey began in Bristol Bay and finished west of Cape Navarin, Russia. Opportunistic midwater and bottom trawls were made targeting pollock backscatter, and also targeting euphausiid layers for multi-frequency identification work and for BSIERP. A large set of physical oceanographic data was collected. Night collections were made of additional oceanographic samples and supplemental trawls. Target strength (TS) data also was collected with a lowered transducer and acoustic data on fish school morphology with a multibeam echosounder. Estimates were made of pollock biomass between 16 m from the surface and 3 m off the bottom. Results showed the EBS summer shelf waters were cold, as in 2006-2008. The U.S. EEZ midwater pollock biomass estimated from the EIT survey was 0.916 million t. The pollock biomass in Russia was about 0.005 million t. East of 170° W (9.6% of the shelf-wide biomass) pollock lengths were between 40-70 cm with a mode at about 55 cm. West of 170° W in the U.S. (89.8% of the shelf-wide biomass) pollock were numerically dominated by small fish with lengths between 9-18 cm (approximate age of 1 year), and then by fish 27-38 cm (approximately age 3s), and there were fewer older adults than usual. In Russia (0.6% of the shelf-wide biomass), pollock lengths were multi-modal, between about 20-60 cm.

Acoustic euphausiid abundance index for the Bering Sea A new analysis of MACE acoustic-trawl survey backscatter data from 2004 to present was used to create an index of summer euphausiid abundance on the Bering Sea shelf. The analysis relies on a comparison of acoustic backscatter at four frequencies and net sampling with a Methot trawl. Euphausiids are one of the most important prey for walleye pollock in the Bering Sea. The time series of Bering Sea summer euphausiid abundance, 2004-2009, relative to 2004 shows that euphausiid biomass increased three-fold, while pollock has decreased. These patterns are

probably related, but they may also be independent responses to changes in environmental conditions. This euphausiid index may help us better understand temporal and spatial variability in pollock abundance.

EBS Pollock update Jim Ianelli reviewed new information in the context of how it relates to the 2008 model projections for 2009 and 2010.

The Team discussed the different approaches to estimating current-year and future-years' mean weights-at-age for EBS pollock, noting that the convention has been to use the recent three-year-mean values. This practice was selected by the SSC several years ago when alternative approaches were presented, which included options to use the means over the recent 10-yr period and over the entire time series. Jim also described a possible new predictor based on a suite of variables that plausibly affect mean weight, such as the proportion of the annual catch that is taken east and west of 170°W, ocean temperature, year-class strength, and a variety of other factors. Work on this new alternative is currently in progress. The set of explanatory variables is limited to those with measurements available in the year of the assessment. As envisioned, the "best" predictive model would be determined on the basis of minimizing the weighted (by average cohort biomass) sums of squared differences between predicted and out-of-sample observed mean weights-at-age. The Team cautioned the assessment authors about introducing a new approach in November unless it was clearly demonstrated to be superior. The team clarified that it may not recommend a new method until September 2010.

Spatial patterns of the 2009 summer season fishery were examined and compared with identical periods from 2006-2008. Several fishermen in the audience commented about their experiences this season and noted the high level of abundance of ~350 g pollock. They also commented that the A and B season fishing patterns (i.e., locations of spawning concentrations, etc.) appeared to be later than normal and thought that might be due to colder ocean conditions. Monthly fishery length frequency data showed the prevalence of relatively large pollock throughout the A-season, and for June and July. By August the preliminary length frequency data indicated that large pollock comprised less of the catch and the main mode of pollock in the fishery was centered around 35 cm.

Jim's presentation of new survey data began by emphasizing that bottom-trawl survey (BTS) gear appears to catch older, larger pollock whereas the echo-integration trawl survey (EIT) covers the upper water column where younger pollock tend to reside. Relative to the 2008 survey index values, both the EIT and BTS point estimates were lower in 2009. However, compared to values projected from last year's stock assessment model the BTS survey estimate was above expectations whereas the EIT estimate was below expectations. The author showed a method for combining these survey index values relative to expectations (by accounting for age-specific selectivities and survey catchability estimates) so that some indication of potential impact relative to the 2008 projections for 2010 could be considered. Results indicate that when divided out by age classes, the combined new data suggest that the 2006 year class is consistent with past estimates (slightly higher by about 7%) but that the 2009 biomass from the two surveys combined was below expectations.

Jim reiterated that interpreting survey results that cover different age-components of the population requires careful consideration and suggested that in the forthcoming assessment, projections of next year's expected survey estimates will be included to aid in interpreting next year's survey results once they become available, i.e., the assessment presented in November of 2009 should include a table of projected survey estimates for 2010 to facilitate interpretation of data presented next September. However, the issue of the relative statistical weights applicable to the two surveys will continue to make *ad hoc* revision of estimated year class strengths a dubious exercise. The impact of new survey data on last year's projection requires understanding how all the different data components interact.

Jane DiCosimo reviewed the two year cycle for setting groundfish specifications. She noted that the TACs were set for 2010 based on the December 2008 Council action and that Council action in October 2009 would not change those TACs. The purpose of setting proposed specifications was solely to notice

the public under the requirements of the Administrative Procedures Act, so that the final rule is a logical outgrowth of the proposed rule. Mary Furuness clarified that NMFS could file an in-season action to lower specifications when the fisheries open in January 2010 based on the Council's December 2009 recommendations. She reported that an in-season action was taken to lower the EBS pollock and cod specifications in January 2009. Jane cautioned that the public should not place undue importance on the Plan Team's recommendations for proposed specifications. Additional information may come before the SSC or Council in October, since the survey data was recently released for AFSC analysis. The preamble to the proposed rule will discuss the information available to the Council and the Council's rationale for its recommendations. That discussion will inform the public that the 2010 final specification for pollock is unknown, but may be lower than the current pollock specification (1.2 M t).

Mike Sigler led the discussion of the proposed specifications for 2010/2011. The team focused its discussion on EBS pollock first, based on new information presented by the AFSC scientists. The team discussed whether it has sufficient new information to recommend a pollock ABC different than the 2008 model's projection for 2010, and if so, what would be the basis for the new recommendation. Mike reviewed the new information, which showed that 1) "EIT Pollock biomass was below last year's projection for 2009, 2) there were 5 consecutive years of low pollock recruitment and that it may be another year before we see the 2006 cohort fully recruited into the fishery, 3) one index (EIT) suggests a lower biomass estimate while the other (BTS) indicated higher than expected. Relative to (3), the Team noted that the EIT survey is understood to provide a better index of 3-year olds (the 2006 year class) than the BTS and that, when the model is run, the BTS age-3 selectivity estimate will likely change and result in a lower abundance estimate for this year class. The author noted that the uncertainty of the 2006 year class may also increase, but is likely to still be above average.

Several Plan Team members spoke in favor of rolling over the 2009 OFL and ABC for 2010 because they felt it would be difficult to justify increasing the ABC by 50% following the two lowest survey estimates on record observed in 2009, which could result in reduced spawning biomass estimates for 2010. They suggested that rolling over the 2009 specifications would notify the public better of the eventual outcome of the assessment and minimize negative expectations for the final specifications to be decided in November 2009. Henry Cheng recalled that an MSY strategy is prohibited for a Tier 1 stock that is below  $B_{MSY}$ .

Other members suggested that this decision was almost a philosophical choice rather than a scientific decision. In the absence of the assessment results, there is not a "better" number to adopt for setting the OFL and ABC. The 2009 and 2010 numbers were equally incorrect; it is not known if the November 2009 assessment will report a number even lower than the 2009 OFL and ABC. Until a new number is available based on the assessment updated with the 2009 survey observations, they suggested keeping the current 2010 specifications for the proposed rule based on the best available information because the survey results were preliminary and the assessment has not been updated and presented.

The Team reached consensus on the following findings (noting that predicting projections from an integrated assessment model with many different interacting data sets is difficult):

- 1) the November 2009 assessment likely would result in a lower pollock biomass projection for 2010 compared with the November 2008 assessment (ABC less than 1.2 M t) due to:
  - a) overall lower than expected survey biomass observations
  - b) the possibility that the 2006 year class will be lower than estimated last year given past estimates of uncertainty about this year class.
- 2) it is possible that the ABC from the November SAFE for 2010 will be even lower than the 2009 ABC (815,000 t) due to the same reasons as above.

- 3) The effect of (1a) and (1b) may mostly be on adult pollock biomass, which could result in a lower spawning biomass than projected and hence, given the harvest control rule, would result in a lower ABC for 2010 than that projected from the 2008 assessment if nothing else in the assessment changes.

The Team was split on its recommendation for proposed 2010 OFL and ABC between rolling over the 2009 OFL and ABC and the 2010 OFL and ABC for the proposed rule. The majority favored rolling over the 2009 numbers. The pollock model previously predicted a substantial increase in spawning biomass, which would have resulted in a higher fishing mortality because of the control rule. In light of evidence from the two pollock surveys, there appears to be less chance for a large increase in spawning biomass. The Plan Team recommendation is to roll over the ABC and OFL from 2009 to 2010 for the proposed rule.

**Alaska Plaice** Tom Wilderbuer consulted with the team on his plans for assessing Alaska plaice with a split sex model. The data show that both sexes are about the same weight for a given length, although females have larger lengths-at-age and weights-at-age. The new model uses sex-specific data on fishery and survey age composition and weight at age. The new model provides sex-specific estimates of population number, fishing mortality, and selectivity, and allows for estimation of sex-specific natural mortality. The team commended the author for development of the new model and recommended that it be used in this year's assessment.

**Groundfish retention standards** Mary Furuness briefed the team on a report she and her staff prepared on the effects of Amendment 80 on groundfish retention standards (GRS). Vessels in the non-AFA trawl catcher/processor sector had the lowest retained catch rates of any groundfish trawl fishery in the BSAI. In response, the Council developed the GRS program under Amendment 80, which requires cooperatives and individual catcher processors in the limited access sector to meet an annual standard for retaining groundfish. The GRS is calculated as the round-weight equivalent of total retained groundfish from production data to total groundfish catch from observer data. The 2009 standard is 75% and increases to 85% in 2011. At the November 2008 meeting, Jason Anderson, Best Use Cooperative, raised an issue about how the assessments and economic chapter report estimates of flatfish bycatch in the assessments in the context of retained and discarded catch for the Catch Accounting System and the team agreed to take a report on that issue at this meeting. Mary provided a brief report on the catch accounting system and Amendment 80 groundfish retention standards. She will prepare draft text that authors could include when presenting bycatch data in the assessment chapters. The text will explain that bycatch rates are sometimes calculated in different ways depending on the context of the specific report.

**Adjourn** The meeting adjourned at approximately 4:00 pm.